

3.2: Newborn and child health 3.3: Infectious diseases, incl HIV/AIDS, tuberculosis and NTDs 3.B: RnD in vaccine and medicine

SDG 3: Good health and well-being

550 Barriers to controlling schistosomiasis at the Ugandan lakes: A qualitative study identifying underlying reasons with regards to knowledge, practices and availability of effective control measures

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In Uganda, more than 10 million people are estimated to have schistosomiasis. The national schistosomiasis control strategy focuses on preventive chemotherapy, but children under five years are excluded as no suitable medication exists. The Pediatric Praziquantel Consortium has developed a child-friendly tablet, evaluated for safety and effectiveness in clinical trials, to fill this gap.

To support planning its implementation, a social science approach was used in Hoima and Bugiri districts of Uganda in June 2022. Data was collected through observations, a survey, focus group discussions and key informant interviews with parents, community volunteers, community leaders and health care personnel. The qualitative data analysis followed an inductive and deductive approach, using a self-established coding framework.

The research revealed a lack of knowledge about schistosomiasis transmission and preventive measures, and in Bugiri, several community members attributed transmission to witchcraft. Risky practices such as using contaminated lake water and unsafe defecation due to low latrine coverage were prevalent. Children and fishermen remain high-risk groups.

Receiving schistosomiasis treatment was reported as difficult. Mass drug administrations were often the only way to receive medication, but practices around it, such as information provided on side effects, had shortcomings. Language barriers between health professionals, teachers and other community members were also identified as a challenge.

Our findings inform the Ministry of Health's schistosomiasis control strategy. We recommend investing in water and sanitation infrastructure and improving the communication flow to the communities by providing visuals and translators at health centres, and training of health professionals.

Track 2: Infectious diseases and (neglected) tropical diseases 3.3: Infectious diseases, incl HIV/AIDS, tuberculosis and NTDs

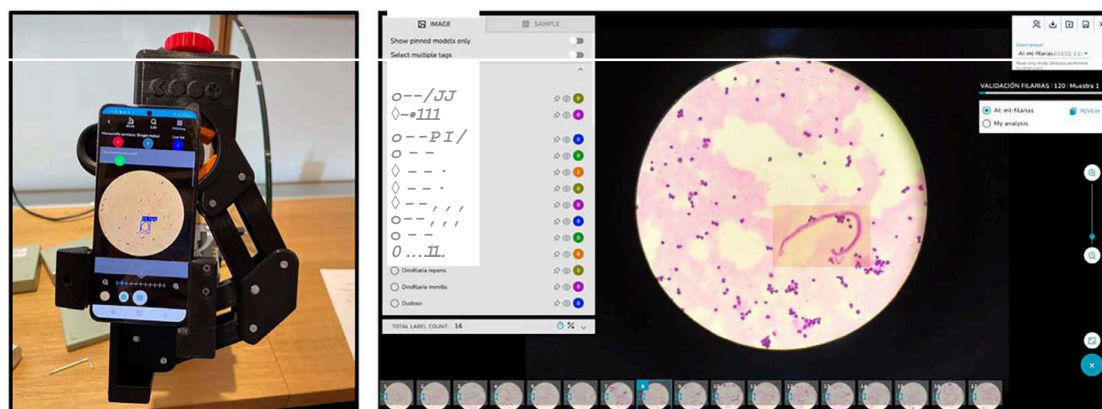
SDG 3: Good health and well-being

556 AI-based microscopy: A game changer for neglected tropical diseases diagnosis

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Optical microscopy remains the gold standard for diagnosing many Neglected tropical Diseases, but it is time-consuming and requires expert staff. Artificial Intelligence

Artificial Intelligence algorithm integrated in the smartphone (left) and in the telemedicine platform (right)



(AI) can revolutionise diagnosis with accurate, objective and automatic analysis, but few algorithms focus on microscopy due to the limited digitization of this diagnostic technique.

In this work we present a novel digital system based on low-cost 3D printed devices and mobile technology that is capable of developing and integrating AI algorithms. The 3D-printed device is coupled to a conventional microscope, converting it into a digital one. By using the smartphone, which is held by the device, microscopy samples are digitized and subsequently uploaded to a telemedicine platform, where AI algorithms can be trained.

The developed digital system works for any disease which is diagnosed under the microscope, and has been already validated on 145 blood samples obtained at two different centres (5259 parasites) for fialiarasis, malaria and chagas disease, with an accuracy for the automatic detection of blood parasites using AI algorithms of 92.5%, 78.8% and 85% respectively. Trained algorithms are further deployed on the smartphone (edge-AI) enabling real-time diagnosis.

The system is designed for easy adaptation and extension to other diseases, and can combine microscopy with other clinical data using novel large language models for a multimodal diagnosis.

Track 2: Infectious diseases and (neglected) tropical diseases
3.2: Newborn and child health 3.3: Infectious diseases, incl HIV/AIDS, tuberculosis and NTDs 3.D: Global health risks
SDG 1: No poverty SDG 2: No hunger SDG 3: Good health and well-being SDG 6: Clean water and sanitation

557 | Fecal biomarkers for environmental enteric dysfunction (EED) and child growth: A longitudinal study in rural areas of Cambodia

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This study aims to investigate potential factors of individual Environmental Enteric Dysfunction (EED) biomarkers and their association with child growth among children <5 years of age in rural areas of Cambodia.

Longitudinal data of the Cambodia Health and Nutrition Monitoring Study was used. Linear regression was used to estimate the potential factors of individual EED biomarkers and generalized linear-mixed effects were used to estimate the association between individual EED biomarkers and child growth.

Our study had a total of 133 children aged less than 5 years from Kratie and Ratanakiri provinces in Cambodia. Child's

age showed strong statically significant association with ali EED biomarkers (NEO levels: AOR = -0.1; 95% CI: -0.1--0.03; MPO levels: AOR = -0.1; 95% CI = -0.1--0.04; MPO + NEO scores: AOR = -0.1; 95% CI = -0.1--0.05). Children <12 months had highest prevalence with ali EED biomarkers (NEO: 59.3%; MPO: 50.0%; NEO + MPO: 74.1%). Having pigs around households showed increase in NEO concentration (AOR = 0.4; 95% CI = -0.1-0.8, $p = 0.083$). Mean HAZ decreased among children with high level of MPO from -1.55 to -2.5 over 15 months of the study period. However, none of the EED biomarkers showed any statistically significant association with either HAZ nor WHZ.

This cohort study of children from rural areas in Cambodia over 15 months suggests that younger children especially in their first year of life are at higher risk of EED. Owning livestock around the house may be a potential source of EED suggesting that WASH programs should consider widening their scope.

Track 2: Infectious diseases and (neglected) tropical diseases
3.3: Infectious diseases, incl HIV/AIDS, tuberculosis and NTDs

SDG 3: Good health and well-being

558 | Haemoglobin dynamics following treatment of visceral leishmaniasis: An individual patient data meta-analysis using the infectious diseases data observatory data platform

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